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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,906	11/30/2001	Chin-Te Huang	67,200-617	4738

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EXAMINER

JACKSON, ANDRE K

ART UNIT PAPER NUMBER

2856

DATE MAILED: 12/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/997,906

Applicant(s)

HUANG ET AL.

Examiner

Andre' K. Jackson

Art Unit

2856/

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 10 is objected to because of the following informalities:

In order to keep uniformity the word "one" should be --1--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,3,5 and 6-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Gott.

Regarding claim 1, Suzuki discloses a "Liquid detecting device" which has a pair of electrical conductors in relative proximity to the fluid (Column 1, lines 11-14, Figure 2), one insulated conductor (2) characterized by an electrical insulative porous sheath (Column 1, line 60, Column 2, line 39). Suzuki does not disclose an electric short caused by the liquid leak. However, Gott does disclose determining the resistance according to a leak of a fluid induced electrical short (Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Suzuki to include determining the resistance according to a leak of a fluid induced electrical short as taught by Gott since this detection method makes it easier to find the leak.

Suzuki does not explicitly disclose circuitry coupled to the conductors to measure a resistance. However, a resistance measuring device is shown (7) which performs the same function as the circuitry claimed in the instant invention.

Regarding claim 3, Suzuki discloses where the pair of electrical conductors comprises a second insulated conductor characterized by an electrically insulated, porous sheath and being parallel in adjacency (Figures 1 and 2).

Regarding claim 5, Suzuki discloses where the pair of conductors comprise individually insulated conductors (Figures 1 and 3).

Regarding claim 6, Suzuki discloses integrally insulated conductors (Figure 2).

Regarding claim 7, Suzuki does not explicitly disclose circuitry that is an ohmmeter. However, a resistance measuring device is shown (7) which performs the same function as the circuitry claimed in the instant invention.

Regarding claim 8, neither Suzuki nor Gott explicitly disclose where the circuit has a voltage source and a current sensing circuit. However,

there has to be a source of voltage to operate the systems conductors and a sensor for the current to make certain that a high current does not destroy the apparatus.

Regarding claim 9, neither Suzuki nor Gott explicitly disclose where the circuit has a current source and a voltage sensing circuit. However, there has to be a source of current to operate the detection system and a sensor for the voltage to make certain that a high voltage does not destroy the apparatus.

Regarding claim 10, Suzuki does not disclose where one insulated conductor comprise a chemically treated insulator that changes color when in contact with a liquid making the leak visible. However, Gott discloses where one insulated conductor comprise a chemically treated insulator that changes color when in contact with a liquid making the leak visible (Column 2, lines 32-34). Therefore, to modify Suzuki to include where one insulated conductor comprise a chemically treated insulator that changes color when in contact with a liquid making the leak visible would have been obvious to one of ordinary skill in the art at the time of invention as taught by Gott since it the color change would make it easier to see if there was a leak in a vessel or on the roof from a distance.

Regarding claim 11, Suzuki does not disclose where the insulator is treated with copper sulfate. However, Gott discloses where one insulated conductor comprise a chemically treated insulator that changes color

when in contact with a liquid making the leak visible (Column 2, lines 32-34). To make the chemical copper sulfate is considered a design choice and well within the purview of the skilled artisan since Gott discloses chemically treating the conductor.

Regarding claim 12, it is considered a design choice and well within the purview of the skilled artisan to make the conductor of nichrome, since this material is known to have a high resistance.

Regarding claim 13, Suzuki discloses where a pair of electrical conductors in proximity to a vessel at least one of the electrical conductors being elongate and having a sheath of an electrically insulative and porous material (Column 1, lines 11-14, Figure 2) and determining a resistance between one of the pair of electrical conductors and other conductor (Figure 3). Suzuki does not explicitly disclose determining the resistance according to a leak of a fluid induced electrical short. However, Gott does disclose determining the resistance according to a leak of a fluid induced electrical short (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Suzuki to include determining the resistance according to a leak of a fluid induced electrical short as taught by Gott since this detection method makes it easier to find the leak.

Regarding claim 14, Suzuki discloses where a pair of electrical conductors in proximity to a vessel at least one of the electrical conductors

being elongate and having a sheath of an electrically insulative and porous material (Column 1, lines 11-14, Figure 2).

Regarding claim 15, Suzuki does not explicitly disclose where the resistance is measured with an ohmmeter. However, a resistance measuring device is shown (7) which performs the same function as the ohmmeter claimed in the instant invention.

Regarding claim 16, neither Suzuki nor Gott explicitly disclose where providing a predetermined current to the conductors and measuring a voltage through the conductors. However, there has to be a source of current to operate the detection system and a sensor for the voltage to make certain that a high voltage does not destroy the apparatus.

Regarding claim 17, neither Suzuki nor Gott explicitly disclose where providing a predetermined voltage to the conductors and measuring a predetermined current to the conductors. However, there has to be a source of voltage to operate the systems conductors and a sensor for the current to make certain that a high current does not destroy the apparatus.

Regarding claim 18, Suzuki discloses where a pair of electrical conductors in proximity to a vessel at least one of the electrical conductors being elongate and having a sheath of an electrically insulative and porous material (Column 1, lines 11-14, Figure 2) and determining a resistance between one of the pair of electrical conductors and other conductor (Figure 3) and providing a voltage to the electrical conductors

(Column 5, line 28). Suzuki does not explicitly disclose determining the resistance according to a leak of a fluid induced electrical short. However, Gott does disclose determining the resistance according to a leak of a fluid induced electrical short (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Suzuki to include determining the resistance according to a leak of a fluid induced electrical short as taught by Gott since this detection method makes it easier to find the leak. Suzuki does not explicitly state that the voltage is measured. However, the voltage has to be measured in order to not damage the equipment by applying too much voltage to the device.

Regarding claim 19, Suzuki does not explicitly disclose determining the resistance according to a leak of a fluid induced electrical short. However, Gott does disclose determining the resistance according to a leak of a fluid induced electrical short (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Suzuki to include determining the resistance according to a leak of a fluid induced electrical short as taught by Gott since this detection method makes it easier to find the leak.

Regarding claim 20, Suzuki does not explicitly disclose where the resistance is measured with an ohmmeter. However, a resistance measuring device is shown (7) which performs the same function as the ohmmeter claimed in the instant invention.

Regarding claim 21, Suzuki does not disclose where determining the existence and location of a fluid induced electrical short between the conductors includes measuring a resistance is done using a computer. However, Gott does disclose a system computer (17), which is connected to the detection circuit (11) that determines the existence and location of a fluid induced electrical short between the conductors. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Suzuki to include where determining the existence and location of a fluid induced electrical short between the conductors includes measuring a resistance is done using a computer as taught by Gott since this would make the detection and location extremely precise.

4. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Gott as applied to claim 1 above, and further in view of Moody.


Regarding claims 2 and 4, neither Suzuki nor Gott discloses a drip tray. However, Moody discloses a "Hot water heater failure protection device with solenoid" which has a leak collector (26) that performs the same function as the drip tray. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Suzuki to include a drip tray/(leak collector) as taught by Moody since when the level


of the liquid rises beyond a certain level within the collector the sensor provides the signal of a leak.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Fri. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are N/A for regular communications and N/A for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A.J. 
December 14, 2002


DANIEL S. LARKIN
PRIMARY EXAMINER